Octonus + Suisse

novel diamond cuts
to develop diamond brands
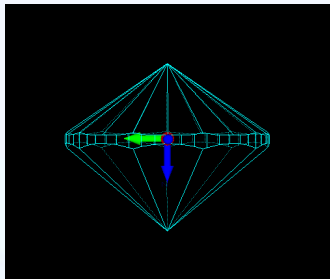
Technology overview

Company: Octonus Suisse SA

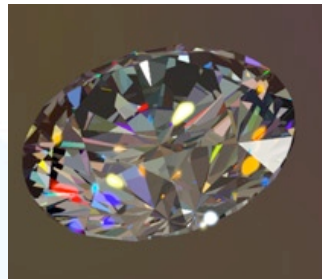Established: Lausanne, Switzerland

Technology is based on **Diamond Modelling**
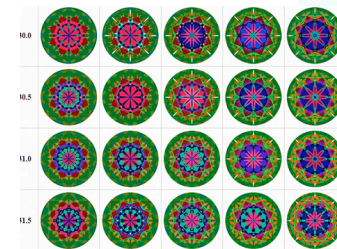
Key modules:

- CAD diamond cut designer
- Photorealistic rendering of diamond appearance
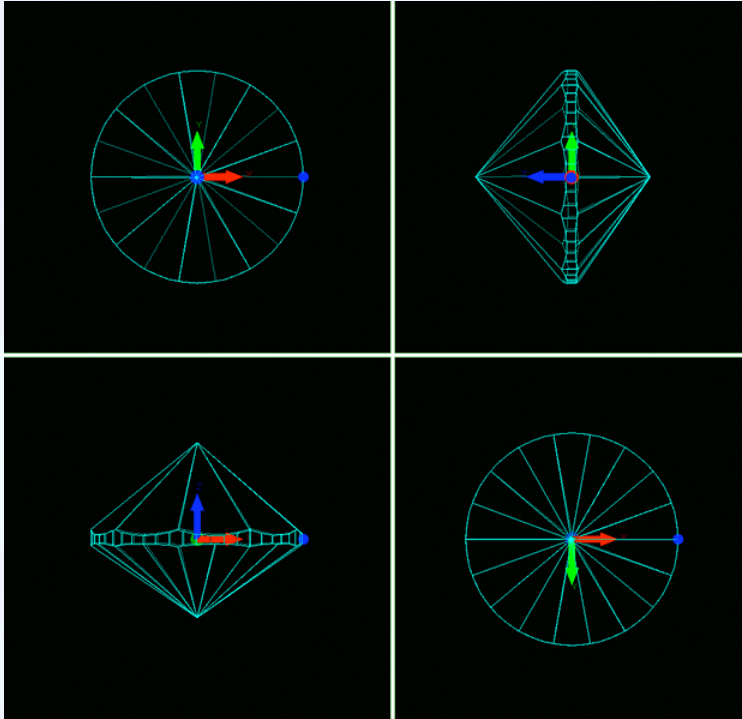- Cut optimization tools

Diamond cut designer

Photorealistic rendering

Cut optimisation

Step 1. Diamond Cut Designer
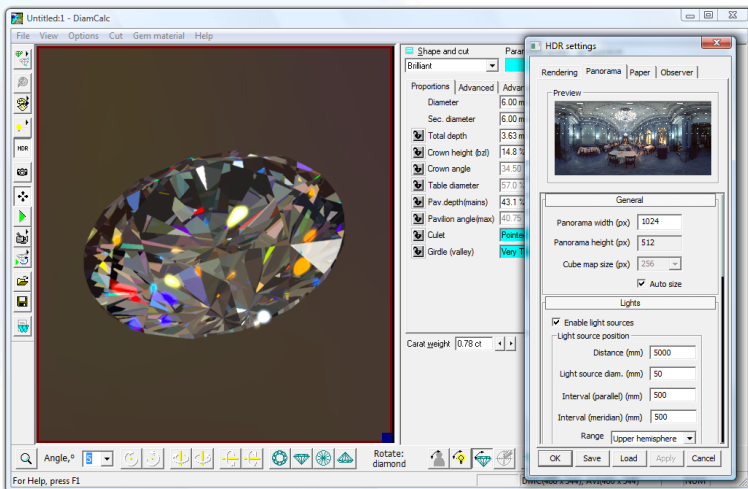## Construction of 3D wireframe model

- Adapted for diamond technology

- Creates parametric models with tied proportions

- All parameters can be varied

- Import from other program / existing cuts

Step 2. Photorealistic rendering

Real-time diamond visualization

- Proprietary algorithm based on 10 years research

- Model includes:

  - diamond optical properties
  - multiple wavelengths: capturing dispersion
  - variable lighting environment
  - observer's anatomy

- Special light used for diamond expertise

- Manual or programmed diamond motion

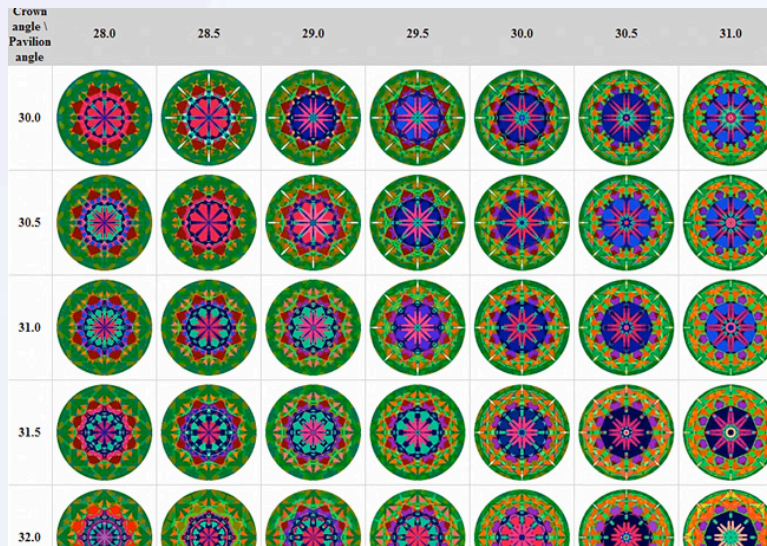- Record movies to share

Step 2. Photorealistic rendering
High Dynamic Range lighting

- 360 panoramic images to create exact lighting
- Real observer – import your photo
- Move diamond, observer and panorama independently
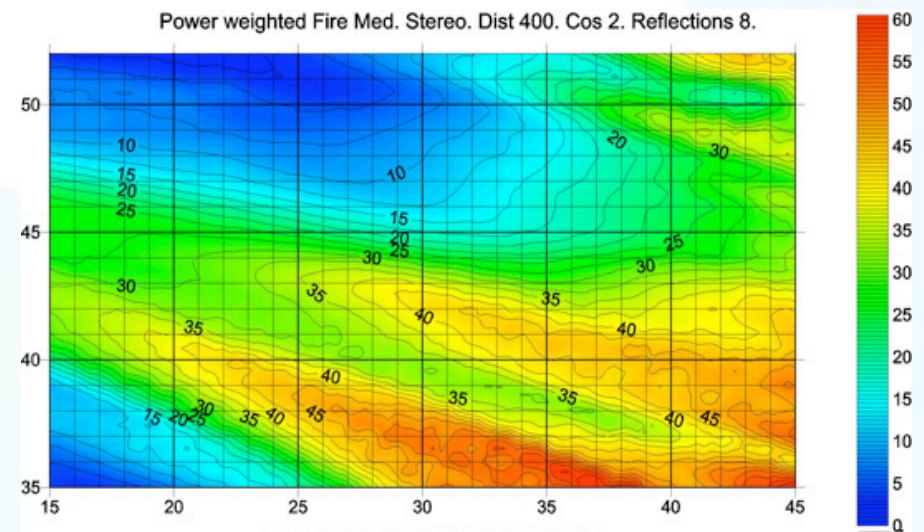- Load your own panoramas (sales floor, ball room, CTI hall)

Step 3. Cut optimization

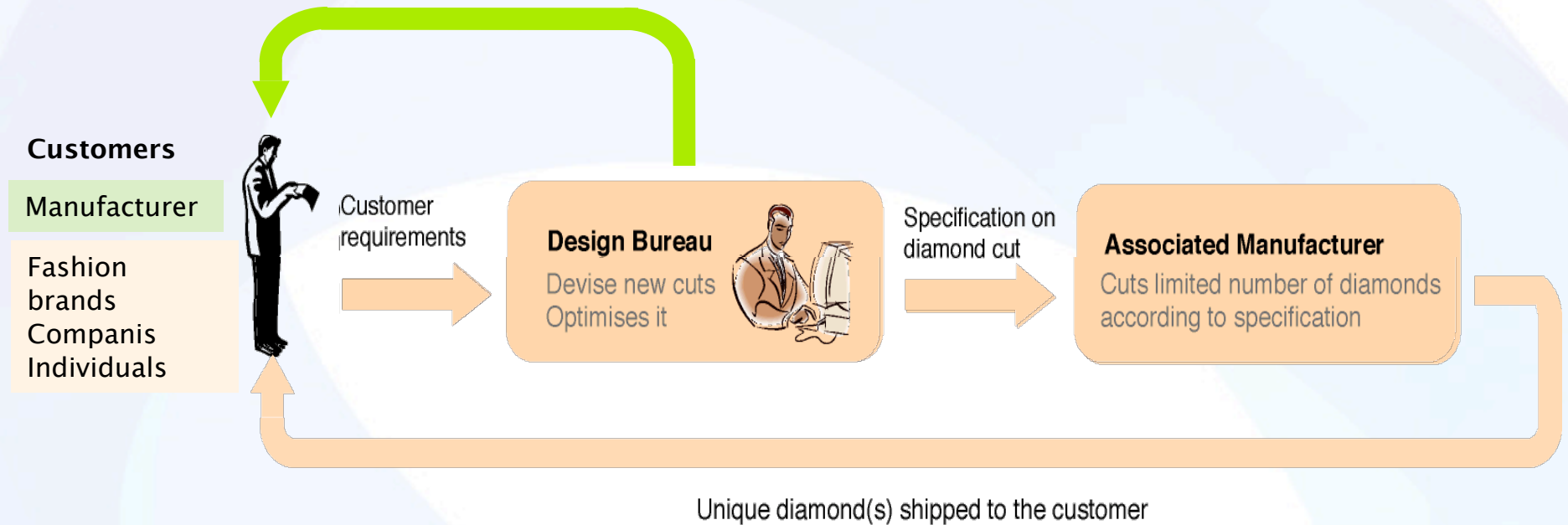## Fine-tune for optical properties & commercial yield

- Automatically scans range of proportions
- Charts of images in any lighting format
- Numerical estimation of optical performance – 9 parameters
- Performance graphs and charts

To identify best
combination
of parameters

Power weighted Fire Med. Stereo. Dist 400. Cos 2. Reflections 8.

Business: Diamond design bureau

Customers

Manufacturer

Fashion
brands
Companis
Individuals

Customer requirements →

Design Bureau
Devise new cuts
Optimises it

Specification on diamond cut →

Associated Manufacturer
Cuts limited number of diamonds according to specification
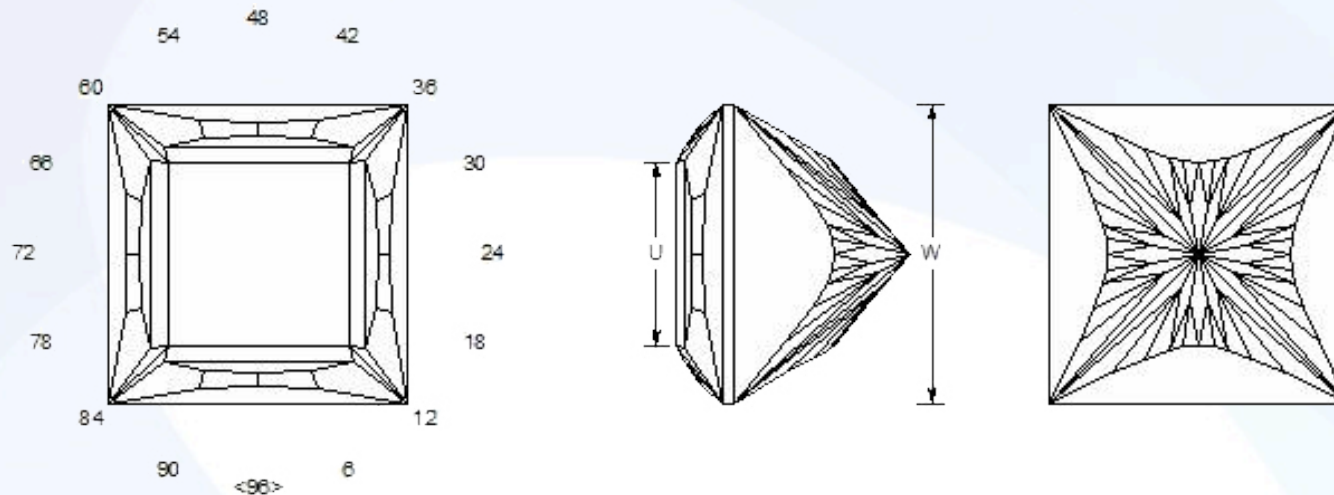
Unique diamond(s) shipped to the customer

Customers: big cutters

   fashion & accessory brands, individuals,

Value: exclusivity, cut reflects corporate / personal symbols, optimized for specific

illumination

Revenue sources: design fee

Example 1: Shairu Gem© / Design

Edited with OctoNus Diamond Calculator

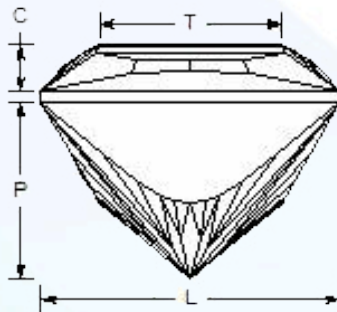Angles for R.I. = 2.420
101 + 4 girdles = 105 facets
4-fold, mirror-image symmetry
96 index
L/W = 1.000 T/W = 0.609 U/W = 0.609
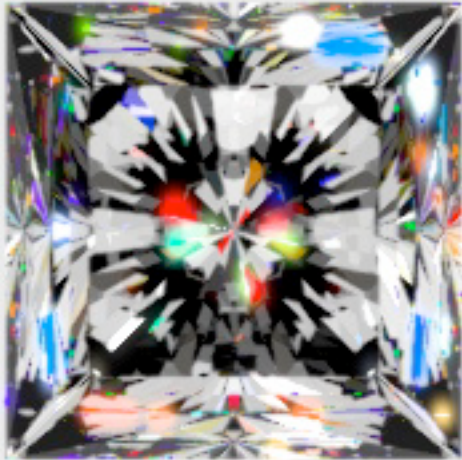P/W = 0.589 C/W = 0.157
Vol./W³ = 0.386

CROWN		PAVILION	
26.41°	96-24-48-72	59.96°	96-24-48-72
29.53°	11.6-12.4-	40.36°	02.9-21.1-
	35.6-36.4-		26.9-45.1-
	59.6-60.4-		50.9-69.1-

Example 1: Shairu Gem© / Completed

100 faceted square cut

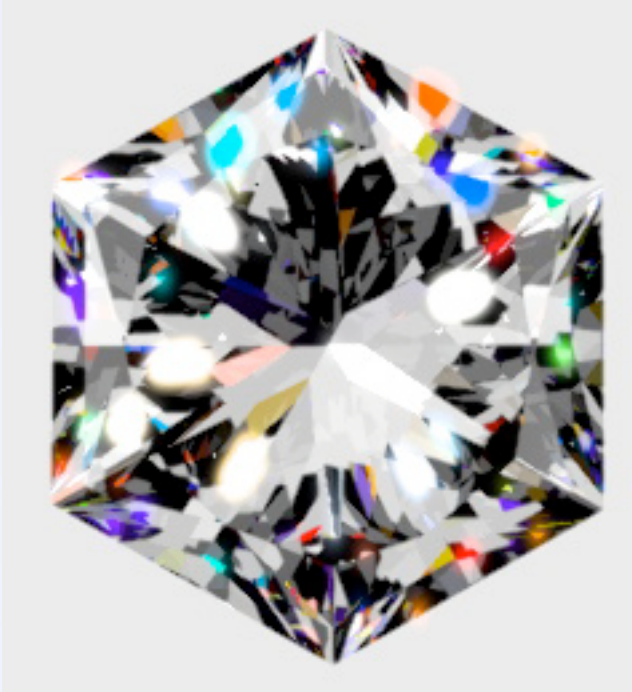**Customer:** Shairu Gems, India

Designed: 2007

Optimised: maximum brilliance & fire

Manufactured: 50.000 pieces, size 0.70 Ct+

DiamCalc use: design & optimisation

Example 2: Cupio Cut©

73 facet hexagonal cut

Customer: Sanghvi & Sons, India

Designed: 2005

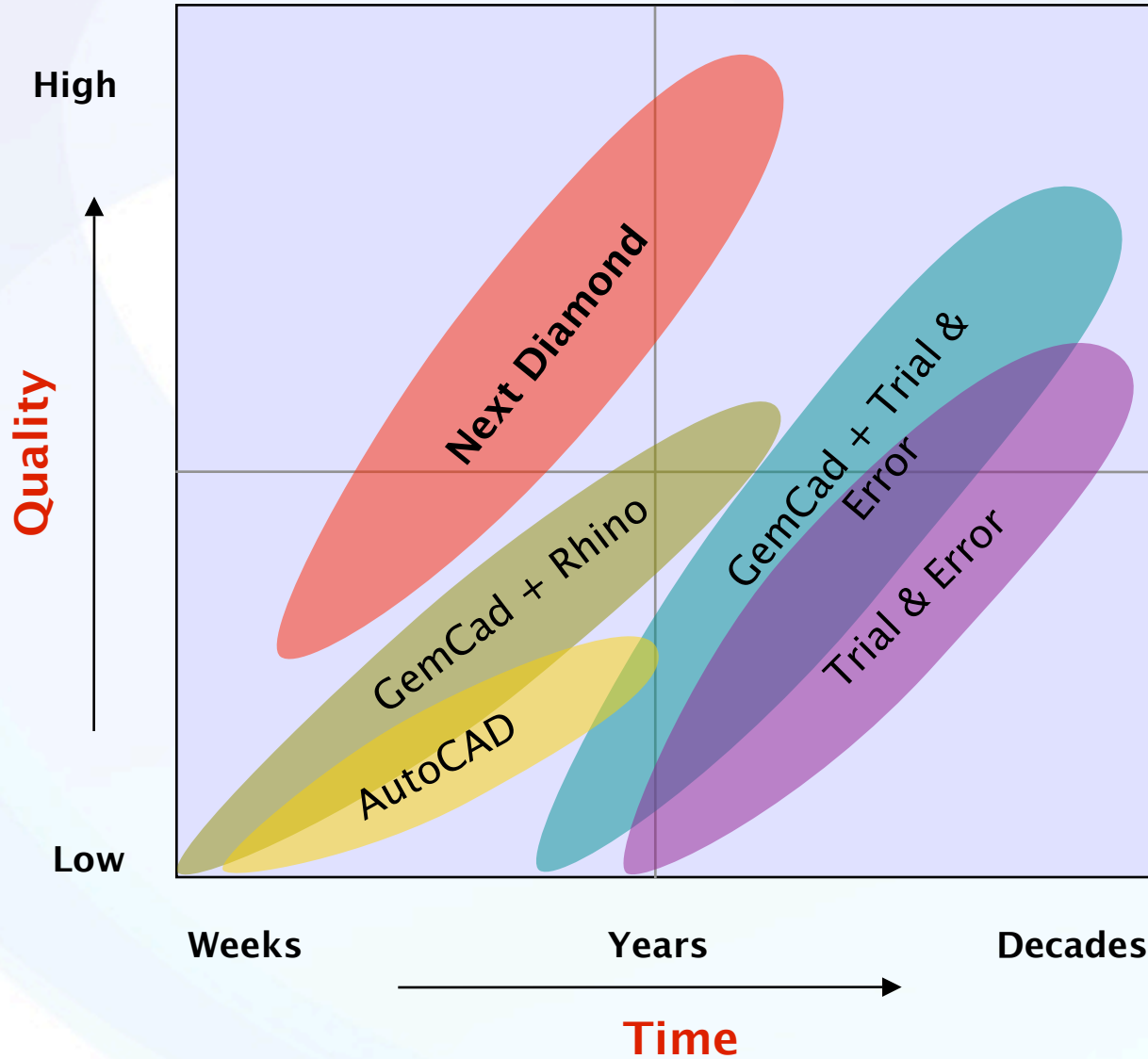**Optimised:** for maximum brilliance

Manufactured: 0.20 – 1.0 Ct

DiamCalc use: optimisation

«The 73–faceted Cupio … offers more brilliance than most princess cut diamonds. True to its Latin meaning, "desire," Cupio's unique six–sided shape will appeal to customers who desire to be different.»

Rapaport Review, 5.08.2007

Cut Design Market

Our focus: Time & cost efficient cut design

- Quality (High / Low)
- Time (Weeks / Years / Decades)

Next Diamond

GemCad + Rhino

AutoCAD

GemCad + Trial & Error

Trial & Error

Clients & Sales

Next Diamond Customers

- **Prestige brand name jewellers**
  - Tiffany, Cartier, Graff, Harry Winston, Bulgari

- **Traditional jewellery retailers**
  - Large chains: Zales, USA (Leo patented cut)
  - Upmarket smaller chains – to differentiate themselves with products of limited availability
  - Nationally marketed supplier brands: Lazare Kaplan

- **Swiss Watch companies**

- **New entrants into jewellery industry**
  - Fashion and accessory brands: Mont Blanc, Prada, Armani

- **New retail channels**
  - CostCo, Walmart, Amazon.com

- **Individuals buying 2nd and 3d stone**
  - Desire to be different

Unique Selling Proposition

New cut design

- Proprietary cut to establish own diamond brand

- Proprietary cut for special occasions

- Featuring corporate logo

- Customer involvement

- Design time: weeks – months

- No diamonds wasted

- Top quality & cost effective

Cut optimization

- For various lighting

- For various customer groups

- Re-cutting old diamonds

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